AMENDMENTS TO THE CLAIMS

Please cancel claims 1-20 without prejudice or consideration of their underlying subject matter.

1-20. (canceled)

21. (new) A random number generation apparatus comprising:

a pick-up block structurally adapted to capture living body information and to output a pick-up signal depicting said living body information;

A/D converter structurally adapted to convert said pick-up signal into a gray scale image composed of a plurality of gray scale pixels, a gray scale pixel of said plurality gray scale of pixels having a gray scale pixel value expressed by a plurality of bits;

a image processor structurally adapted to generate a binary image from said gray scale image, a binary image pixel of said binary image being generated by comparing said gray scale pixel value with an average of gray scale pixel values for said plurality of gray scale pixels, said binary image pixel having a binary pixel value expressed by a single bit; and

an encryption block having a random number generator structurally adapted to generate a random number sequence from said pick-up signal when no living body information is captured by said pick-up block, said random number sequence being generated using either said gray scale pixel value or said binary pixel value.

22. (new) A random number generating apparatus as claimed in Claim 21, wherein said living body information is a fingerprint.

23. (new) A random number generating apparatus as claimed in Claim 21, wherein said binary image is composed of a plurality of binary image pixels.

24. (new) A random number generating apparatus as claimed in Claim 21, further comprising memory structurally adapted to store said gray scale image.

25. (new) A random number generating apparatus as claimed in Claim 21, further comprising memory structurally adapted to store said binary image.

26. (new) A random number generating apparatus as claimed in Claim 21, wherein said plurality of gray scale pixels is the number of gray scale pixels for the entire gray scale image.

27. (new) A random number generating apparatus as claimed in Claim 21, wherein said plurality of gray scale pixels is the number of gray scale pixels located at a segment of said gray scale in a predetermined range from said gray scale pixel.

28. (new) A random number generating apparatus as claimed in Claim 21, wherein black portions represent convex portions of said living body information and the white portions represent concave portions of said living body information.

29. (new) A random number generating apparatus as claimed in Claim 21, wherein said gray scale pixel is located at a start address,

said random number generator generating said random number sequence by extracting the least significant bit of said gray scale pixel value and the least significant bit for each of the gray scale pixel values of a predetermined number of gray scale pixels succeeding said gray scale pixel.

30. (new) A random number generating apparatus as claimed in Claim 29, wherein said start address is located at a predetermined position in said gray scale image.

31. (new) A random number generating apparatus as claimed in Claim 29, wherein said start address is located at an appropriate position in said gray scale image,

said appropriate position being at a horizontal address and a vertical address,

said horizontal address being a value expressed by said gray scale pixel value and,

said vertical address being a value expressed by another gray scale pixel value of another gray scale pixel of said plurality gray scale that is adjacent said gray scale pixel.

32. (new) A random number generating apparatus as claimed in Claim 21, wherein said binary pixel is located at a start address,

said random number generator generating said random number sequence by extracting the least significant bit of said binary pixel value and the least significant bit for each of the binary pixel values of a predetermined number of binary pixels succeeding said binary pixel.

33. (new) A random number generating apparatus as claimed in Claim 32, wherein said start address is located at a predetermined position in said binary image.

34. (new) A random number generating apparatus as claimed in Claim 32, wherein said start address is located at an appropriate position in said binary image,

said appropriate position being at a horizontal address and a vertical address,

said horizontal address being a value expressed by said binary pixel value and,

said vertical address being a value expressed by another binary pixel value of another binary pixel of said plurality binary that is adjacent said binary pixel.

35. (new) A random number generating apparatus as claimed in Claim 21, wherein said encryption block further comprises:

encryption means structurally adapted to perform encryption using an encryption key.

36. (new) A random number generating apparatus as claimed in Claim 35, wherein said encryption key is said random number sequence.

37. (new) A random number generating apparatus as claimed in Claim 36, wherein said encryption key is according to said random number sequence.

38. (new) A random number generating apparatus as claimed in Claim 37, wherein said encryption means employs the RSA encryption method for generating said encryption key according to two prime numbers and generates said two prime numbers according to said random number generated by said random number generating means, so that said two prime numbers are used for generating said encryption key.

39. (new) A random number generating apparatus as claimed in Claim 35, further comprising:

a fingerprint identification block structurally adapted to identify an individual by comparing said binary image with registered image information.

40. (new) A random number generating apparatus as claimed in Claim 39, wherein said fingerprint identification block performs an encryption of a plain text using said encryption key when said individual is identified.

41. (new) A random number generating method comprising steps of:

capturing living body information;

outputting a pick-up signal depicting said living body information;

converting said pick-up signal into a gray scale image composed of a plurality of gray scale pixels, a gray scale pixel of said plurality gray scale of pixels having a gray scale pixel value expressed by a plurality of bits;

generating a binary image from said gray scale image, a binary image pixel of said binary image being generated by comparing said gray scale pixel value with an average of gray

scale pixel values for said plurality of gray scale pixels, said binary image pixel having a binary pixel value expressed by a single bit; and

generating a random number sequence from said pick-up signal when no living body information is captured by said pick-up block, said random number sequence being generated using either said gray scale pixel value or said binary pixel value.

42. (new) A random number generating method as claimed in Claim 41, wherein said living body information is a fingerprint.

43. (new) A random number generating method as claimed in Claim 41, wherein said binary image is composed of a plurality of binary image pixels.

44. (new) A random number generating method as claimed in Claim 41, wherein said plurality of gray scale pixels is the number of gray scale pixels for the entire gray scale image.

45. (new) A random number generating method as claimed in Claim 41, wherein said plurality of gray scale pixels is the number of gray scale pixels located at a segment of said gray scale in a predetermined range from said gray scale pixel.

46. (new) A random number generating method as claimed in Claim 41, further comprising a fingerprint identifier structurally adapted to identify said binary image.

47. (new) A random number generating method as claimed in Claim 41, wherein said gray scale pixel is located at a start address,

said random number generator generating said random number sequence by extracting the least significant bit of said gray scale pixel value and the least significant bit for each of the gray scale pixel values of a predetermined number of gray scale pixels succeeding said gray scale pixel.

48. (new) A random number generating method as claimed in Claim 47, wherein said start address is located at a predetermined position in said gray scale image.

49. (new) A random number generating method as claimed in Claim 47, wherein said start address is located at an appropriate position in said gray scale image,

said appropriate position being at a horizontal address and a vertical address,

said horizontal address being a value expressed by said gray scale pixel value and,

said vertical address being a value expressed by another gray scale pixel value of another gray scale pixel of said plurality gray scale that is adjacent said gray scale pixel.

50. (new) A random number generating method as claimed in Claim 41, wherein said binary pixel is located at a start address,

said random number generator generating said random number sequence by extracting the least significant bit of said binary pixel value and the least significant bit for each of the binary pixel values of a predetermined number of binary pixels succeeding said binary pixel.

51. (new) A random number generating method as claimed in Claim 50, wherein said start address is located at a predetermined position in said binary image.

52. (new) A random number generating method as claimed in Claim 50, wherein said start address is located at an appropriate position in said binary image,

said appropriate position being at a horizontal address and a vertical address,

said horizontal address being a value expressed by said binary pixel value and,

said vertical address being a value expressed by another binary pixel value of another binary pixel of said plurality binary that is adjacent said binary pixel.

53. (new) A random number generating method as claimed in Claim 41, further comprising step of:

perform encryption using an encryption key.

54. (new) A random number generating method as claimed in Claim 53, wherein said encryption key is said random number sequence.

55. (new) A random number generating method as claimed in Claim 53, wherein said encryption key is according to said random number sequence.

56. (new) A random number generating method as claimed in Claim 55, wherein said step of perform encryption further comprises:

employing the RSA encryption method to generate said encryption key according to two prime numbers and generates said two prime numbers according to said random number generated by said random number generating means, so that said two prime numbers are used for generating said encryption key.

57. (new) A random number generating method as claimed in Claim 53, further comprising the step of:

identifying an individual by comparing said binary image with registered image information.

58. (new) A random number generating method as claimed in Claim 57, further comprising:

performing an encryption of a plain text using said encryption key when said individual is identified.